

CLAIMS

1. A reversible multicolor recording medium,
characterized by comprising:

5 recording layers each containing a plurality of
reversible thermal coloring compositions having different
coloring tones, formed to be separated from and stacked on
a surface direction of a supporting substrate; and
said plurality of reversible thermal coloring
10 compositions containing light-to-heat transforming
materials which absorb infrared rays having different
wavelength ranges to generate heat, respectively;
wherein an absorption peak wavelength of said
light-to-heat transforming material contained in said
15 recording layers becomes the longest wavelength at the layer
formed nearest said supporting substrate, and becomes a
shorter wavelength as the layer is closer to the surface layer
in the stacked order.

20 2. The reversible multicolor recording medium according
to claim 1, characterized in that at least one of said
light-to-heat transforming materials is cyanine dyes or
phthalocyanine dyes.

25 3. The reversible multicolor recording medium according
to claim 1, characterized in that said plurality of recording
layers are formed by stacking said recording layers via heat
insulating layers, respectively.

30 4. The reversible multicolor recording medium according
to claim 1 or 2, characterized in that a protective layer is

formed as the uppermost layer.

5. The reversible multicolor recording medium according to any of claims 1 to 4, characterized in that

5 said recording layers comprises a color-forming compound having an electron donating property and a develop/subtractive agent having an electron accepting property,

 wherein said recording layers are reversibly changed
10 to two states of colored state and decolored state by a reversible reaction between said color-forming compound having an electron donating property and said develop/subtractive agent having an electron accepting property.

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6. A recording method for reversible multicolor recording medium recording image information using a reversible multicolor recording medium,

 said reversible multicolor recording medium having:
20 recording layers each containing a plurality of reversible thermal coloring compositions having different coloring tones, formed separated from and stacked on a surface direction of a supporting substrate;

 said reversible thermal coloring compositions
25 containing light-to-heat transforming materials which absorb infrared rays having different wavelength ranges to generate heat, respectively; and

 an absorption peak wavelength of said light-to-heat transforming material contained in said recording layers
30 becomes the longest wavelength at the layer formed nearest said supporting substrate, and becomes a shorter wavelength

as the layer is closer to the surface layer in the stacked order;

wherein said recording method records image information is characterized by comprising the steps of:

5 setting said whole recording layers in a decolored state preliminarily by performing a heat treatment;

 exposing said recording layers by irradiating with an infrared ray having a selected wavelength range corresponding to a selected recording layer, in accordance with predetermined image information; and

10 allowing said recording layers to be selectively colored by generating to heat.

7. A recording method for reversible multicolor recording medium recording image information using a reversible multicolor recording medium,

 said reversible multicolor recording medium having:
 recording layers each containing a plurality of reversible thermal coloring compositions having different coloring tones, formed separated from and stacked on a surface direction of a supporting substrate;

20 said reversible thermal coloring compositions containing light-to-heat transforming materials which absorb infrared rays having different wavelength ranges to generate heat, respectively; and

 an absorption peak wavelength of said light-to-heat transforming material contained in said recording layers becomes the longest wavelength at the layer formed nearest said supporting substrate, and becomes a shorter wavelength as the layer is closer to the surface layer in the stacked order;

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wherein said recording method records image information is characterized by comprising the steps of:

setting said whole recording layers in a colored state preliminarily by performing a heat treatment;

5 exposing said recording layers by irradiating with an infrared ray having a selected wavelength range corresponding to a selected recording layer, in accordance with predetermined image information; and

allowing said recording layers to be selectively
10 decolored by generating to heat.